

10/550396

Rec'd PCT/PTO 8 JUN 2006

Translation

## PATENT COOPERATION TREATY

## PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>903311</b>	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. <b>PCT/JP2004/004095</b>	International filing date (day/month/year) <b>24.03.2004</b>	Priority date (day/month/year) <b>26.03.2003</b>
International Patent Classification (IPC) or national classification and IPC		
Applicant <b>TAKACHI, Ken</b>		

1.	This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.	
2.	This REPORT consists of a total of <u>9</u> sheets, including this cover sheet.	
3.	This report is also accompanied by ANNEXES, comprising:	
a.	<input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>4</u> sheets, as follows: <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.	
b.	<input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).	
4.	This report contains indications relating to the following items:	
	<input checked="" type="checkbox"/> Box No. I	Basis of the report
	<input type="checkbox"/> Box No. II	Priority
	<input checked="" type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
	<input type="checkbox"/> Box No. IV	Lack of unity of invention
	<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
	<input type="checkbox"/> Box No. VI	Certain documents cited
	<input type="checkbox"/> Box No. VII	Certain defects in the international application
	<input checked="" type="checkbox"/> Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

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Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-5, 7-13 as originally filed/furnished
- pages\* 6 received by this Authority on 22.09.2004
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the claims:
- nos. 3-5, 8-10 as originally filed/furnished
- nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- nos.\* 1, 2, 6, 7, 11-13 received by this Authority on 22.09.2004
- nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the drawings:
- sheets fig. 1-14 as originally filed/furnished
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos. 13

because:

☐ the said international application, or the said claims Nos. \_\_\_\_\_  
relate to the following subject matter which does not require an international preliminary examination (*specify*):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. \_\_\_\_\_  
are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. \_\_\_\_\_ are so inadequately supported  
by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claims Nos. 13

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

☐ has not been furnished☐ does not comply with the standard

the computer readable form

☐ has not been furnished☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions.

☐ See Supplemental Box for further details.

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1. Statement			
Novelty (N)	Claims	1-12	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-12	NO
Industrial applicability (IA)	Claims	1-12	YES
	Claims		NO
2. Citations and explanations (Rule 70.7)			
[Inventive Step]			
Document 1: JP 2741206 B2 (Topcon Corp.), 30 January 1998			
Document 2: JP 6-50927 Y2 (Omron Corp.), 21 December 1994			
Document 3: JP 5-154197 A (Getz Bros. Co., Ltd.), 22 June 1993			
Claims 1 and 2			
In particular, refer to the disclosures of document 1 (page 3, right column, lines 21 to 29, and fig. 2 and 6 to 8) cited in the international search report.			
The "optical fiber (69') that is optically connected to the light source unit (71)" in the invention that is disclosed in document 1 corresponds to the "light projection means" in the invention that is set forth in the abovementioned claims of the present international application. Likewise:			
<ul style="list-style-type: none"><li>• the "optical fiber (70') that is optically connected to the light reception unit (72)" corresponds to the "light reception means";</li><li>• the "reflection-type flat plate (56') or the "switch plate (60') corresponds to the "wall" or to the "moving wall"; and</li></ul>			

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

- the position where the "reflection coefficient" changes corresponds to the "light quantity variation region" or the "reflection region."

Newly cited document 3 (paragraphs [0012] to [0017] and fig. 1) discloses the technical feature of using a hand switch (14) that is configured from a variable capacity switch in order to achieve an optimal injection speed, injection volume and injection pressure in a power control system for injecting a contrast medium into the blood vessel lumen of a patient.

The switch elements disclosed in document 1 and document 3 are common in that they are both contactless switches; likewise, the switch elements disclosed in both documents are also common in that they are both intended for use in devices that are employed in an operating room or the like.

In addition, document 1 indicates that "it is the intention...to provide a...device that can be operated safely even if soaked with water" (page 1, left column, lines 25 to 28), and further indicates that "there is no fear of short circuiting or the like, even if soaked with water or the like" (page 3, right column, lines 35 to 36).

Consequently, it would not be technically difficult to configure the hand switch that is disclosed in document 3 using the technical features that are disclosed in document 1, which shares a similar switching method and/or usage environment, in order to achieve the goals that are presented in document 1.

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
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## Claim 3

Document 2 (page 2, right column, lines 29 to 40 and fig. 4) cited in the international search report discloses the technical feature of adjusting the quantity of the light projected from the light projection element (10) which is then reflected towards the side of the light receiving element (11) as reflected light by adjusting the surface areas and/or the shades of the white region(s) and the black region(s).

Therefore, it would be easy for a person skilled in the art to conceive of employing the abovementioned technical feature in the region where the "reflection coefficient" changes in the invention that is disclosed in document 1.

## Claim 4

In particular, refer to the disclosures in document 1 (fig. 8) cited in the international search report.

The "switch plate (60')" that is disclosed in document 1 changes the quantity of light in a binary manner by means of a "reflection surface" and a "light transmission opening (61')"; therefore, said "switch plate (60')" differs from the "moving wall" set forth in the present international application, which changes the quantity of light in a binary manner by means of the saturation and the shade of the moving wall. However, the feature of controlling the reflection coefficient by means of the saturation and the shade of a member is disclosed in document 2, as indicated above.

Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
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## Claim 5

The "tread part (51)" that is disclosed in document 1 (fig. 2) cited in the international search report corresponds to the "pressing region member" that is set forth in claim 5 of the present international application. Likewise, the "unit for adjusting the quantity of light (56)" corresponds to the "suspended wall."

## Claim 6

The "spring (54)" that is disclosed in document 1 (fig. 2) cited in the international search report corresponds to the "elastic energizing means" that is set forth in claim 6 of the present international application.

## Claim 7

In particular, refer to the disclosures in document 1 (page 2, right column line 35 to page 3, right column, line 20, and fig. 2 and 4 to 6) cited in the international search report.

The "filter (56)" or the "switch plate (60)" that is disclosed in document 1 corresponds to the "means for varying the quantity of light that is transmitted," which is set forth in claim 7 of the present international application.

## Claim 8

Refer to the explanation in relation to claim 3, above.

In particular, the feature of adjusting the transmission rate by changing the saturation is so well

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Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

known that no example thereof is necessary.

Claim 9

Refer to the explanation in relation to claims 4 and 8, above.

Claim 10

Refer to the explanation in relation to claim 5, above.

Claim 11

Refer to the explanation in relation to claim 6, above.

Claim 12

The number of switches that are provided within the hand switch can be determined by a person skilled in the art, as appropriate.

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Box No. VIII      Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Newly added claim 13 sets forth the feature of  
"further providing an air bag for transmitting the  
pressure with which the drug solution is injected into  
the patient."

On the other hand, the description (page 1, lines  
24 to 27) presents problems related to the air pressure  
transmission characteristics which result when an air  
cable is led to the variable hand switch.

Therein, the basis for claiming that the  
abovementioned problems do not occur in the invention  
that is set forth in claim 13 is not fully supported by  
the description.